

What is Claimed is:

5 1. A locking device for use in conjunction with a shaft for engagingly connected to a carriage, the shaft having a longitudinal axis, said locking device comprising:

a cylindrical body slideably mounted on the shaft, the cylindrical body having an inner circumference, an outer circumference, a thickness defined by the inner and outer circumferences, and an aperture opened through the thickness of the cylindrical body,
10 wherein the cylindrical body further has a mounting mechanism for engagingly attaching the carriage;

an elastomer body, seated in the aperture, for providing a frictional force against the shaft when the elastomer body is pressed toward the shaft; and

a cam ring having an inner surface mounted over the outer circumference of the
15 cylindrical body for rotational movement about a rotation axis between a first position and a second position, the rotational axis substantially parallel to the longitudinal axis of the shaft, the cam ring having a clearance on the inner surface, wherein

when the cam ring is located at the first position, the clearance is spaced from the aperture, and the inner surface of the cam ring presses the elastomer body toward the
20 shaft, providing a frictional force against shaft, thereby restricting the cylindrical body from moving along the longitudinal axis, and

when the cam ring is located at the second position, the clearance is aligned with the aperture on the cylindrical body, allowing the elastomer body to seat partially in the clearance, thereby reducing the frictional force against the shaft such that the cylinder
25 body can be moved along the longitudinal axis for adjusting the position of carriage along the shaft.

2. The locking device of claim 1, wherein the carriage is used for mounting a print head assembly for printing a mailpiece moving in a moving path, and wherein the cam
30 ring is rotated to the second position for adjusting the position of the print head assembly relative to the moving path based on the mailpiece, and the cam ring is rotated to the first position for locking the print head assembly at the adjusted position.

3. The locking device of claim 1, wherein the cylindrical body has a coaxially extended section, the extended section having an outer circumference, and wherein the carriage has a flange, the flange having an opening for mounting over the outer
5 circumference of the extended section.

4. The locking device of claim 3, wherein the flange has a tab protruding into the opening of the flange, and wherein the extended section has a slot cutting into the out circumference of the extended section for seating the tab so as to prevent the flange from
10 rotating relative to the extended section.

5. The locking device of claim 3, wherein the extended section has a threaded segment, the locking device further comprising a lock nut for engaging with threaded section in order to keep the flange fixedly mounted on the extended section.
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6. The locking device of claim 5, wherein the cylindrical body has a first end for mounting the cam ring and a second end adjacent to the threaded segment of the extended section, and wherein the flange is mounted on the extended section between the lock nut and the cam ring.
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7. The locking device of claim 1, wherein the cam ring has a further clearance which is shallower than the clearance such that when the cam ring is located at second position, the elastomer body is partially seated in the further clearance but substantially maintaining the frictional force against the shaft for restricting the cylindrical body from
25 moving along the longitudinal axis.

8. A method for locking and unlocking a carriage engagingly connected to a shaft having a longitudinal axis, said method comprising the steps of:

1) providing a locking device, slideably mounted on the shaft, for securely
30 attaching the carriage, the locking device comprising:

a cylindrical body, having an inner circumference adjacent the shaft, an outer circumference, a thickness defined by the inner and outer circumferences, and an aperture opened through the thickness of the cylindrical body;

an elastomer body, seated in the aperture, for providing a frictional force against the shaft when the elastomer body is pressed toward the shaft;

a cam ring having an inner surface mounted over the outer circumference of the cylindrical body for rotational movement about a rotational axis, between a first position and a second position, the rotational axis substantially parallel to the longitudinal axis of the shaft, the cam ring having a clearance on the inner surface, such that when the cam ring is located at the first position, the clearance is spaced from the aperture, causing the inner surface to press the elastomer body toward the shaft, thereby providing a frictional force against the shaft, and when the cam ring is located at the second position, the clearance is aligned with the aperture of the cylindrical body, allowing the elastomer body to seat partially in the clearance, thereby reducing the frictional force against the shaft;

2) rotating the cam ring to the second position to reduce the friction force against the shaft, so as to adjusting the position of the carriage along the shaft; and

3) rotating the cam ring to the first position so as to providing the frictional force against the shaft, thereby maintaining the adjusted position of the carriage.

9. The method of claim 8, wherein the cam ring is rotated from the first position to the second position in a clockwise direction.

10. The method of claim 8, wherein the cam ring is rotated from the first position to the second position in a counter-clockwise direction.

11. An addressing machine having at least one print head assembly for printing a substantially flat item moving in a moving direction, the flat item has a size, the addressing machine comprising:

at least one shaft having a longitudinal axis, substantially perpendicular to the moving direction of the flat item;

a shaft mount for mounting the shaft; and

a locking device comprising:

a cylindrical body slideably mounted on the shaft, the cylindrical body having an inner circumference, an outer circumference, a thickness defined by the inner and outer circumferences, and an aperture opened through the thickness of the cylindrical body, wherein the cylindrical body further has a mounting mechanism for engagingly attaching the print head assembly;

an elastomer body, seated in the aperture, for providing a frictional force against the shaft when the elastomer body is pressed toward the shaft; and

a cam ring having an inner surface mounted over the outer circumference of the cylindrical body for rotational movement about a rotation axis between a first position and a second position, the rotational axis substantially parallel to the longitudinal axis of the shaft, the cam ring having a clearance on the inner surface, wherein

when the cam ring is located at the first position, the clearance is spaced from the aperture, and the inner surface of the cam ring presses the elastomer body toward the shaft, providing a frictional force against shaft, thereby restricting the cylindrical body from moving along the longitudinal axis, and

when the cam ring is located at the second position, the clearance is aligned with the aperture on the cylindrical body, allowing the elastomer body to seat partially in the clearance, thereby reducing the frictional force against the shaft such that the cylinder body can be moved along the longitudinal axis for adjusting the position of carriage along the shaft relative to the moving direction, based on the size of the flat item.

12. The addressing machine of claim 11, wherein the flat item comprises an envelope.

13. The addressing machine of claim 11, wherein the flat item comprises a sheet of paper.

14. The addressing machine of claim 11, wherein the flat item comprises a mailpiece.